

approach

MAY 1979 THE NAVAL AVIATION SAFETY REVIEW



A pilot had the "blahs" all day. He had read the latest *APPROACH* twice during visits to the reading room. He didn't have the cramps, but only because his relief valve was undertorqued and wouldn't allow pressure to build up. Nevertheless, he was scheduled to fly that night and was determined to go. He did, but almost died in an ensuing crash. The mishap could have been caused by . . .

PEER PRESSURE or Can't you hack it?

By LT Michael G. Thomas
NAVSAFECEN LAMPS Analyst

HAVE you ever been in a situation where you're in over your head and been set up for that mysterious *mishap monster*? You know, the one who's just waiting to reach up and bite you in ye olde backside — with a vehemence that would rival a DI jawboning a recruit. You have? Well, don't feel like the Lone Ranger. Every day naval aviators are placed in similar situations by peer pressure.

There are some who do things totally against the grain of every commonsense bone in their body. In the end, it's not the hecklers who take the heat, the final trip, or face their peers around the long green table. It's you.

Take a minute or two to answer the questions which follow. See if you and others in your outfit measure up.

- Is your Ops officer a tyrant? Are his three top concerns flight time, *more flight time*, and STILL MORE FLIGHT TIME?

- Is there a reasonable procedure to indicate your desire not to fly on a particular day?

- Is your reason for not flying questioned/ridiculed?

- Do you or your fellow pilots subject others to the question, "Can't you hack it?"

- Do the maintenance folks become more concerned over the fact that you downed an aircraft rather than saying, "Roger ball," and fixing it?

What were your answers? If they were mostly "yes," then now is the time to stop and reconsider the whole thing. After all, what is the difference between preflighting your aircraft and preflighting yourself? Each and every time you are scheduled to fly, weigh your qualifications and experience against the assigned mission. Be honest about how you feel physically, and run an attitude check on yourself. If you don't measure up in these areas, then, come hell or high water, don't be pressured into doing something you might not live to regret.

There is an old saying aviators believe in. They believe that it can't happen to them — just the other guy. Well, there are many pilots who would be extremely glad to be able to tell you that it can happen to you. Unfortunately, the tellers have purchased their farms and lead a completely quiet retirement. ◀



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The F-18 Hornet on this month's cover was painted by artist Harlan Krug. The F-18 flew its first flight in November 1978.

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Cold Water Survival

TALES OF

The Scenario

The flight began as a write-in, because the originally scheduled crew had exceeded their crew-day. The mission was to be twofold: a "pinky" ordnance hop on a target some 300 miles to the north and a NATOPS check for the leader of Phantom flight. All phases of the flight went according to the book until about 30 minutes after takeoff, when the odds began stacking against Phantom-2.

After level-off at FL270, the wingman's Master Caution and Check Hyd lights illuminated. The PC-1 hydraulic gage began to fluctuate approximately 1000 psi, then gradually rebuild to normal pressure. Phantom-2 notified his leader of his problems and initiated a RTB (return-to-

SURVIVAL The Pilot's View

By Maj P. E. Davis, USMC

The ejection was well briefed and carried out, using the lower handle as the means of cockpit egress. The only startling thing was the noise of the seat firing; everything else went as advertised. The opening shock of the chute was not too harsh except that the risers slapped against my helmet, causing my head to snap upright. I looked about and noticed that my RIO was slightly behind and below me in descent. I attempted to contact Lead, who was circling us, utilizing my survival radio. After several unanswered calls, I determined that the radio wasn't operating as advertised and replaced it in my survival vest with the "beeper" still on, in hopes that it would attract SAR assets.

During descent I began to orientate myself with land, which appeared 4-5 miles to the west. I saw a boat in the distance; however, it was headed toward shore and my hopes of an early pickup began to fade. As I approached the water I noticed that my RIO was in the drink several hundred yards from where I was about to land. I prepared for water entry by discarding my gloves, deploying my seat pan and raft, and activating my LPA. As I neared the water I noticed how choppy the waves were and recalled the brief:



TWO SURVIVORS

base). At this time, Phantom-2 felt no great urgency about the predicament that he was in, as the lights went out and the pressure became fairly steady. However, he and his RIO were still quite concerned over what could happen. They were out over the cold Atlantic where the sea water temperature was a reported 40°F, but they did have on their ventile dry exposure suits (a definite psychological sense of security).

As the flight's lead switched to allow the "quasiemergency" aircraft's crew to monitor the situation, the flight entered the clouds. No sooner than this switch commenced, the "lights" illuminated again. Simultaneously,

the control stick began to stiffen in the pilot's hand. Full forward pressure could not keep the Phantom from climbing and eventually stalling out. At that time, both the PC-1 and PC-2 gages headed toward zero! The aircraft headed "feet-dry" by the pilot's judicious use of rudders and afterburners. However, this was not enough to keep the ailing F-4 in the air, as it continued down at more than 6000 feet per minute! Phantom-2 notified his lead and Center of the intention to eject. The crew soon left the comfortable surroundings of their cockpits and made the nylon letdown to the awaiting cold Atlantic, several thousand feet below.

water 40°F and winds of 15 knots. Upon entry I released my Koch fittings and, as anticipated, the water was shockingly cold, despite my antiexposure suit.

Even though I was wearing a ventile dry exposure suit, I felt that I had become completely soaked immediately. The winds dragged me through the water just like in the training pool. The immediate coldness caused delay in getting the fasteners opened and the chute released. The wind blew the chute clear and I popped upright just a few feet from my inflated raft.

Raft entry was no problem, but once into it I had extreme difficulty getting to my survival vest equipment, due to the confines of the raft and the coldness.

I put the upper half of the seat pan in my lap and placed the flares, radio, strobe light, and pen flares on it for future use. I took off my helmet and reattempted contact with the circling aircraft. Still no luck. Although I was very aware of the coldness setting in, I noticed that my head was still warm thanks to my "skull cap." It was about this time that I realized that a lengthy time in the water was becoming a reality. The silence, with the exception of the waves and wind, was eerie, and the thought of no pickup entered my mind.

My hopes began to rise rather rapidly as I saw a C-117 fly directly overhead! I fired a pen flare, to no avail, as the *Skytrain-I* kept humming along in the same direction. As it disappeared over the horizon, those rising hopes faded and left me with that drained feeling again. This feeling was shortlived as I spotted an F-4 (my lead) and an A-4 circling

in the distance. I tried to locate the lower half of my seat pan to ready the flares should those aircraft approach me, but I couldn't locate the lanyard. I was becoming more and more aware of the cold, as I had been in the water for at least 30 minutes by this time. The feeling that I was about to spend the night in the water felt like the weight of the world was on my shoulders. Although I hadn't done anything that physically strenuous, I felt like I just completed the PFT (physical fitness test). I then understood what the "shrinks" meant by stresses induced as a result of ejection. Exhaustion was definitely setting in. If the orbiting aircraft would only move to the north of their position, I felt that I would eventually be seen and pickup would follow, but they continued to orbit to the south of me.

I knew that I was only 4-5 miles from shore, so I started paddling in that direction. I could see the coastline each time I rode the crest of the waves. This perked up my spirits, but darkness was setting in and I wasn't sure if I would make landfall by sunset. Suddenly a helicopter passed directly overhead. This caught me by surprise and I tried to radio the chopper. This time it appeared to get through, as it reversed its directions and headed back toward me. As I readied my signal flares for the approaching SAR bird, a Coast Guard cutter appeared out of the swells about 50 yards away! Needless to say, I was really "pumped up" at this time.

The cutter picked me up and I appeared to be OK, except for the stiffness caused by the exposure to the cold

water and the exhaustion of the entire ordeal. Once aboard the cutter, I began to realize that exposure to the elements had taken its toll. I was shivering involuntarily but still was able to direct the coxswain towards the area where my RIO had landed. As we approached that area we noticed the SAR H-46 had its hoist lowered and was picking up my RIO. My initial thoughts of elation were soon deflated as he slipped out of the horse collar and back into the drink. Thinking that the RIO was hurt, I suggested to the coxswain that maybe it would be better if "we" picked him up instead of another helo attempt. The cutter turned on its flashing light (indicating pickup authority) and proceeded toward my RIO for rescue. Once in the cutter, my RIO appeared in worse condition than I. He was chalky-blue in color and really had the shivers! He had been in the water for nearly three-quarters of an hour. His condition was aggravated due to his dry suit being full of water, caused by a broken chest zipper and his turtleneck sweater being outside the neckband. The rescue was over as darkness settled in.

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From hindsight, I see there were several things of importance and worthy of mention from my experience. First, this accident happened when the outside air temperature at Homebase was about 70°F and the water temperature about 60°F. Fortunately, we were not lured into a false sense of security and did wear antiexposure suits. Without them, I'm sure the outcome would have been quite different. Protection would have been much greater if we also had worn the correct underclothing and flying coveralls under the dry suits. This hop was supposed to be "within gliding distance of land" (since deleted from General NATOPS) throughout, and under normal conditions the local thought is "not to be burdened" with the suits. Hopefully, no one will feel this "burden" anymore.

The final decision to comply with existing regulations on exposure suits was the real key to why we fared so well. Secondly, training really paid off. There was very little uncertainty about how the ejection, descent, and water entry was to work. The equipment operated as advertised, except for the radio "reception" (ensure that the "beeper" is off when transmitting). The radios did, however, assist both crewmen in the rescue efforts. There is no doubt in my mind that previous water survival training paid off in this mishap. I for one am a true believer in wearing exposure suits when the temperature dictates — period!



SURVIVAL

The RIO's View

By 1stLt R. L. Garmeson, USMC

Even though I've rehearsed ejection in the past, I really never thought I would have to do the actual thing (it always happens to the other guy, right?). If it were to come (and it did), I felt that I would be well prepared (I wasn't, totally). The ejection came and I thought the worst was over. It wasn't, by far!

On my descent, I went over the postejection procedures and deployed my raft, inflated my LPA, but left my gloves on (my first mistake). I found my Koch fittings with no problem and prepared for water entry. The wind was blowing in such a way that I entered the water with my back toward the direction of travel. My first attempt to release the fittings resulted in only the right one releasing. The

left one hung up due to my wet gloves constantly slipping off the release latch. I had to reattempt the release, and this delay was enough to turn me around and entangle me in the spaghetti-like mess of shroudlines. Finally releasing the left fitting, I tried to get into my raft, but my leg was still entangled in the shroudlines. In the 40°F water I remained!

I noticed my next mistake when I felt the cold water enter my dry suit. I had failed to reinsert the turtleneck sweater inside the neck seal during descent. This, coupled with a broken zipper, allowed the suit to fill up with about a half-gallon of sea water! After over one-half hour in the water, I was able to free myself from the entanglement and

The complete CWU-21/P Antiexposure Assembly consists of the CWU-21/P Antiexposure Flying Coverall, CWU-23/P Antiexposure Liner, and SRU-25/P Rubber Man's Sock. The assembly is to be worn beneath an Aramid (Nomex) flying coverall and any other special flying clothing. The recommended configurations are as follows:

WATER TEMPERATURE	RECOMMENDED UNDERCLOTHING	OUTER CLOTHING
Below 50°F	CWU-43/P and CWU-44/P Aramid (Nomex) Antiexposure Underwear (two sets) -OR- Polyvinyl Chloride (PVC) Cold Weather Underwear (two sets) CWU-23/P Liner Heavy Wool Socks	CWU-21/P Antiexposure Flying Coverall to be worn beneath an Aramid (Nomex) Flying Coverall and any other Special Flying Clothing
50 - 60°F	CWU-43/P and CWU-44/P Aramid (Nomex) Antiexposure Underwear -OR- Polyvinyl Chloride (PVC) Cold Weather Underwear CWU-23/P Liner Wool Socks	CWU-21/P Antiexposure Flying Coverall to be worn beneath an Aramid (Nomex) Flying Coverall and any other Special Flying Clothing
50 - 60°F*	CWU-43/P and CWU-44/P Aramid (Nomex) Antiexposure Underwear (two sets)	Aramid (Nomex) Flying Coverall and any other Special Flying Clothing.

* When Antiexposure Flying Coverall deemed unnecessary by commanding officer based on SAR factors.

* Determination of degree of antiexposure protection required is to be assessed by commanding officers in accordance with OPNAVINST 3710.7J, 711, paras 11 and 12.

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finally enter the raft, exhausted.

Shortly after entering the raft, an H-46 SAR bird overflew me, then returned, hovered, and lowered the horse collar for pickup. Needless to say, I was particularly pleased with the SAR system. As the helo neared, I left the raft and reached for the horse collar, but the helo continued forward, forcing me to release the collar and return to my raft. The second attempt with the collar was going according to the book until I neared the helo's door. I reached for the opening, slipped out of the ring, and fell some 25 feet back into the cold sea! So, my thoughts of "the swim was over" were wrong and I began to feel frustration set in. Fortunately, it did not take its toll, as a Coast Guard cutter was within sight, and rescue was completed within several minutes. Upon entering the boat I noticed my pilot all bundled up in blankets. Exhausted and very cold we were, but all in one piece.

Some very important lessons were learned from that overwater, controlled ejection.

- Take off your gloves and store them for future use.
- Ensure that all watertight orifices are, in fact, tightly sealed against the skin.
- If there are any damaged or ill-fitting seals noticed prior to takeoff, this is the time for repairs, not later.
- Get into your raft as soon as possible and prepare for the worst.
- Judicious use of all available signal devices will enhance rescue efforts.
- Don't reach out or attempt to grab anything once in the collar. Let the rescue personnel do what they are trained to do.
- Be prepared for ejection anytime you prepare for flight. Don't get complacent. It can happen to anyone. The other guy could be you.
- When the conditions meet NATOPS requirements, wear all the required/recommended antiexposure gear in addition to other required equipment (and wear it as prescribed).

So you've always wanted to be a Blue Angel

NOW'S YOUR CHANCE



THE United States Navy Flight Demonstration Squadron, the Blue Angels, will be selecting two pilots and a flight leader this year for their 1980 team. Selections will be made in September 1979, but interested officers are encouraged to submit their applications as soon as possible.

Applicants for demonstration pilot should be a tactical jet pilot with 1500 hours flight time, a regular Naval officer, and going to or on shore duty. Letters of application should be endorsed by the Commanding Officer and forwarded to the Navy Flight Demonstration Squadron, with a copy to the Chief of Naval Air Training and the Chief of Naval Personnel (Pers-433A) or Commandant Marine Corps (Code AA) for Marines.

Officers interested in the position of flight leader must have 3500 hours flight time, be a lieutenant commander or commander who has been screened for aviation command, and preferably, had command of a tactical jet squadron. Flight leader applicants should submit their letters directly to the Chief of Naval Air Training, with information copies to the Commanding Officer, Navy Flight Demonstration Squadron, and the Chief of Naval Personnel (Pers-433A).

All letters of application should include each officer's experience and qualifications. Any further questions can be answered by contacting the Blue Angels via telephone (Autovon: 922-2584/2585, Commercial: (904) 452-2583/2584) or by corresponding with the Blue Angels, Naval Air Station Pensacola, Pensacola, FL 32508.



DEAR SKIPPER

By LT Robert L. Crowe
Fleet Air Reconnaissance Squadron THREE

DEAR SKIPPER,

Congratulations! To command a naval aviation squadron is the dream of all naval aviators. Your abilities and judgment have been proven countless times throughout your career. Now, after many years of hard work and many hours in various airplanes, you will be the one addressed as "Skipper." Yours will be the enviable job of exercising command over this squadron to accomplish the assigned mission.

You will have the difficult job of meeting these mission requirements in a safe manner, with limited assets and time. The directives and instructions you sign will become the foundation for the safety programs of this squadron. However, the papers you sign and the words you speak will have little effect compared to the actions you take. The aircraft you accept and the procedures and techniques with which you fly will become the norm for which your pilots will strive. If the norm you set is near the limit of safety, the squadron will operate on the brink of disaster. If the norm shows a commitment to safety, your squadron will be safe. In short, Sir, you are now the example for all of your pilots.

As safety officer, it will be my job to assist you, and to execute your safety program. I plan to keep you informed when unsafe practices develop and to urge action to end those practices. I know it is easier to knock on the Skipper's door to prevent an accident than it is to knock on a widow's door after an accident. Comments I make in the coming year may make you mad and possibly get me thrown out of your office, but these will always be efforts to help keep your squadron safe. Though I may disagree with some of your priorities, you will always have my complete support. I look up to you, Skipper, and hope to serve you well as your aviation safety officer.

Very respectfully,
Your ASO



Open Season on Sea Knights. The ones that think hostile fire flying ended with the Vietnam War haven't talked with the highly-seasoned, combat-experienced pilot and crew of this particular H-46.

While flying on a routine instrument roundrobin flight from MCAS(H) to MCAS in mostly VMC, nothing spectacular or eventful occurred — until landing and postflight, that is. The crew noticed that there were two holes the size of .30-cal. rounds in the skin of the *Sea Knight*! Possible cause factor: *Aircraft received ground fire.* A definite two-pointer was in store for this unscheduled "combat" mission. Whoever said that it was safer flying in CONUS obviously hasn't flown the same routes as did this aircrew. Next time, in addition to checking NOTAMs and weather, they'll most likely check with the game warden to see what's "in season." Hopefully, it's not "helos" next time!

Attaboy. ENS Bill Miles, a VFP-63 replacement pilot, returned to NAS Miramar following a syllabus tactics hop in his RF-8G *Crusader*. After a normal break, the starboard main landing gear failed to extend. The gear handle was stuck down and would not move. An emergency was declared, and ENS Miles climbed to the Delta pattern to exercise prescribed NATOPS procedures. An airborne visual check confirmed that the gear doors were open but the starboard main landing gear was still retracted, the port and nose gear — down and locked. Negative and positive "G," plus yawing the aircraft, proved ineffective. After further consultation with Base radio, an attempt was made to lower the "stuck" gear pneumatically. This also proved futile. With 650 pounds of fuel remaining, ENS Miles made a successful shortfield arrestment with the aid of the LSO on station.

ENS Miles' professional judgment and aviation skills kept the damage minor. The *Crusader* was airborne within a week of this mishap. Well done!

A Shame. Two aircraft were spotted in the hangar adjacent to each other. One was parked tail toward and perpendicular to the other — like a T. Maintenance on No. 1 was an ongoing engine change. The troops were using an overhead hangar hoist to facilitate the engine change. Work on No. 2 was delayed awaiting parts.

That particular hoist had been restricted in the transverse mode due to the discovery of a design fault. It was necessary to use a tow tractor to position the aircraft under the hoist instead of positioning the hoist above the aircraft. The engine was removed and the aircraft was pulled back a little way, but the tractor was left attached to the aircraft.

A trainee saw the unattended tractor and decided to return it to the line shack. He didn't conduct a walkaround inspection but started up and pulled the aircraft into the aft, port side of the No. 2 aircraft. A nearby observer hollered until he was hoarse, but the trainee didn't hear him because of their proximity to an active flight line and the usual echoes in the hangar.

You can bet it was clearly a case of operator error. He didn't ensure the tractor was detached and safe to move; he didn't pay attention to what he was doing; he was in a hurry (for no reason); he wasn't supervised; and he violated squadron GSE SOP.

Unqualified and Unauthorized to the Nth Degree! Two helicopter mechs were on a B-1 workstand servicing the tail rotor of an H-53. Another mech (under training) went over to use the TA-75 tow tractor which was still attached to the workstand. (You say, "I know what's going to happen, so

say no more!") The mech under training was unaware of the coupled tractor and workstand; plus, he did not have a GSE license; nor did he have permission to use the tractor in the first place.

As the mech under training started the tractor, the two other mechs tried to warn the "driver" of the impending mishap by shouting words of danger. These shouts went unheeded. The noise of adjacent aircraft turnups, plus the sound attenuators worn by the driver, blocked out any attempts of preventing the inevitable.

The tractor, with checkstand in tow, was placed in motion. The workstand contacted the tail rotor hub and two tail rotor blades of the *Sea Stallion*. Fortunately, no one was injured, but the damage incurred was nearly \$30,000 and took 48 man-hours to repair. All because a nonqualified and unauthorized person used unfamiliar equipment without making necessary checks of the area.

No excuse can be made for supervisory error. All personnel in maintenance departments are (or should be) aware of GSE licensing and operating procedures. The fact that an operator is licensed does not always preclude accidents, but an accident caused by an unlicensed individual is inexcusable.

I Can Hack It. A training command T-2C *Buckeye* experienced a port engine flameout shortly after takeoff, while passing through FL240. The "sierra hotel" pilot saw an en route Navy airfield below, but elected to continue the flight after achieving a successful relight. This particular engine had three previous port engine flameouts, of which the pilot was aware. Undaunted, the aviator *extraordinaire* pressed on. Passing FL250, the same engine flamed out once again! Now, did he elect to land at the Navy field below? Negatory, sports fans. Another successful relight and "continue-to-march" at reduced power settings to his destination some 750 miles from point of departure. Landing was without further incident (what else could one expect from such a show of astute airmanship).

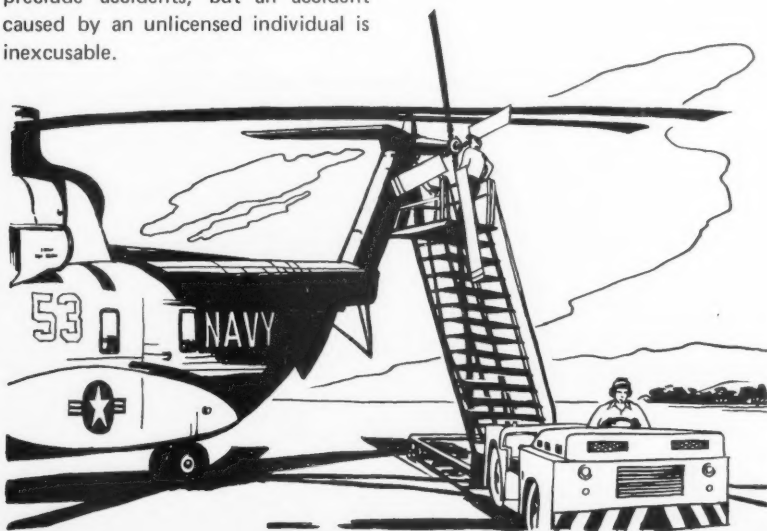
Less than a week prior to this incident, during a safety standdown, pilots had been briefed to land at the nearest suitable field in the event of an engine flameout. A few special individuals unfortunately consider that some procedures apply only to others, while they are *exempt*. Contrary to the belief of some, safety *does not* possess an *exempt* clause. Practice it!

Inadvertently Chained Phantom. The F-4 was on GCA final to Runway 22 at MCAS Kaneohe Bay, Hawaii. The weather is CAVU 99 percent of the time at this tropical island paradise, but this day was filled with 100 percent liquid sunshine. The duty runway was 04, but due to deteriorating weather conditions the pilot was offered and accepted a downwind approach to an arrested landing on Runway 22, rather than a circling approach in marginal conditions to 04.

The arrestment was to be into the E-27 gear on 22, but the E-5 overrun chain gear was still rigged for Runway 04, some 150 feet short of the E-27 gear. On speed, on glidepath, gear/flaps/hook all down, the *Phantom* landed as programmed at the GCA threshold and inadvertently engaged the E-5 gear in the wrong direction! The crossdeck pendant sheared and whipped out to the sides and rear of the aircraft. Fortunately, the only damage was to the arresting gear and none to the F-4.

Under the above conditions, hook-down approaches into the E-27 gear were normal at this airfield; however, the GCA controller did not, in this situation, inform the pilot that the E-5 chain gear was still in battery for Runway 04. This procedure (hook-down) has since been modified, and both controllers and pilots alike now know that only the midfield M-21 or longfield E-28 arresting gear will be used for arrested landings on Runway 22, when the duty is 04.

There are many types of arresting/abort gear at the many airfields to which aviators transit during their careers. Don't assume that one or a combination of all are in battery at any given time. Doublecheck NOTAMs and with the local air traffic controllers at your destination next time — even if it's your homebase. TransPac aircraft, take note.



Checkflight Crews

Are they doing their job?

By CDR W. R. Needham
CO, VA-65

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THE PMFC (Postmaintenance Functional Checkflight), its purpose and conduct, has always been a great concern of mine. My earlier interest was not nearly so keen as on my current tour as executive officer and now commanding officer. OPNAVINST 4790.2A indicates a PMFC is required to determine whether airframe, powerplant, and/or accessories, etc., are functioning within predetermined standards while subjected to a specific operating environment. OPNAVINST 3710.7J indicates that only those aircrew authorized in writing by the commanding officer may be assigned as crewmembers of a PMFC, either partial or full system. The two instructions and their guidance are broad in scope and afford commanding officers room for management and individual initiative when implementing the program at the squadron level. As a result of a recent close examination of my PMFC program, I offer the following observations, conclusions, and recommendations as food for thought to all my fellow commanding officers.

My view of a PMFC, particularly a full-systems PMFC, is that it affords the command a one-time, unique opportunity to evaluate the condition of an aircraft under a microscope. The flightcrew assigned serves as the eyes of the microscope, and have as their purpose the close

examination of the *entire* aircraft. Their responsibility is not just for the proper functioning of equipment while in the air and on the ground, but also corrosion, DZUS fasteners, lightbulbs, screws, and of course the proper functioning of all components, either hydraulically or electrically actuated.

I thought my aircrews were in fact doing the above, using as their primary vehicle the abbreviated NATOPS Functional Checklist. We all know that instructions say to use this abbreviated checklist, after review of the expanded checklist contained in the applicable NATOPS manual. The question now becomes, "Can our flightcrews be reasonably expected to retain the explicit guidance contained in the expanded checklist from the NATOPS, and only require the key words that appear in the abbreviated checklist?" I think not.

If one selected flightcrew performed PMFCs on a daily basis, and therefore the specific requirements for the functional tests were exercised frequently, the abbreviated checklist would be appropriate. However, such is not the case in any TACAIR squadron with which I'm personally familiar. If we expect our PMFC flightcrews to measure system performance against a standard, and the performance is dependent on specific conditions — switch



settings/configuration — then these specific requirements must be readily available to the flightcrews when performing the prescribed functional tests. If these instructions are not available, the validity of the evaluation becomes questionable. I had suspected for some time that this squadron's PMFC program was not all it should be but, on one particular day and flight, the magnitude of the problem came sharply into focus.

I was assigned an aircraft for flight which had just had a PMFC performed by one of our designated PMFC flightcrews. When I returned from the flight, I had 32 gripes, the vast majority of which were not written up by the previous flightcrew. Admittedly, a number of the gripes were nit-picking but, nonetheless, valid gripes which had not been identified before. Many were not related to the maintenance action which resulted in the PMFC, but should have been noted by the professional eyes of the designated PMFC flightcrew. (Yes, I know, "What about the other crews that flew the aircraft?" but that's another subject.) I discussed the matter with the flightcrew involved in an effort to ascertain why a seemingly qualified, and clearly designated, PMFC crew could have missed so many discrepancies. The answers received ranged from, "I just didn't check that," to "Oh, that wasn't part of the checklist."

After this discussion, and a close examination of the command's PMFC program, it became crystal clear that positive action was required.

The entire program within the squadron was reviewed with the following results:

- The command instructions were modified to provide for a more stringent program of flightcrew qualification prior to nomination as a PMFC (partial and full system) crewmember.
- Positive and explicit command guidance was promulgated on the breadth and depth of examination expected on each PMFC. Basically, the guidance states that flightcrews conducting a partial PMFC should conduct a full-system PMFC on the aircraft as training for qualification, and subsequent designation as a full-system PMFC crewmember. They are also to employ the expanded Functional Checklist from the NATOPS manual, which I had reduced to kneeboard size.

The foregoing is not presumed to be a foolproof program by any means. But it's a step, first step only, to codify a viable PMFC program with more firm guidance than previously noted by this writer. If it helps anyone else, I'm glad. If there are other programs as good or better, let's publish them so all can benefit from your success. ◀

What good is history?

By LCDR Ron Kuehn
VP-56

WHAT causes a pilot to take off with the bomb bay doors open, the safety pin installed, and continue the flight? How about the pilot who flies too low and slow while conducting a special training evolution — never to live to tell of it? Why does a pilot attempt one too many approaches, only to find himself running dry on approach to his alternate? Who fails to check NOTAMs, only to find himself out in the cold during an IFR approach, or continues his approach after losing sight of the runway?

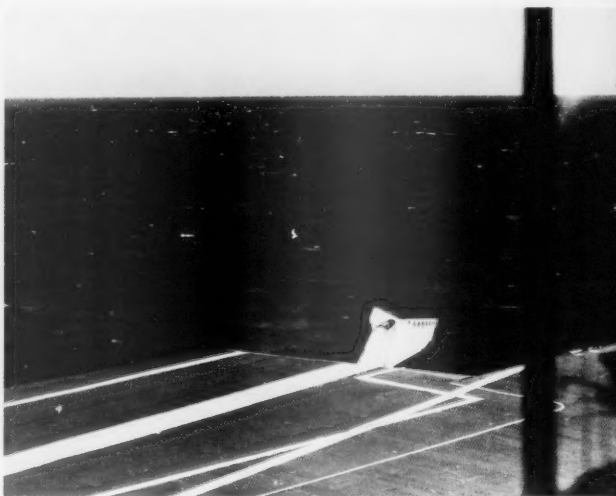
What causes a crewmember to feel it unimportant to strap in, wear a helmet, follow NATOPS, wear gloves, ensure his survival equipment is up to date, or, for that matter, know what the survival equipment consists of?

What causes maintenance personnel to disregard consulting the MIMs, fail to ensure weight and balance is correct, omit the CDI after performance of a task, fail to follow established procedures and checklists, delay entering the latest MRC change, or sign off a gripe before ensuring the aircraft was put back together and the tools accounted for?

What causes a lineman to forget he has something hooked to the tractor and pull a workstand into a wing, cut the corner a little too short (for one more wingtip crunch), fail to ensure the tiedown cables are removed from the path of the bomb bay doors which are to be opened, or fail to secure the yellow equipment before the winds come and take the checkstand for a ride across the ramp — into the waiting aircraft?

To answer these questions would require a long dissertation. Safety is history! People have been making mistakes for as long as people have been working. Almost every mistake that can be made has been made — *many times* — and fortunately, most were recorded. Wise people periodically review past performance and lessons learned, and thereby stave off the recurrence of another mishap. The unwise say, "Times-a-plenty, right now I have more important things to do," and ultimately repeat history!

For example, they send a pilot with too little flight time during the last quarter on an important mission in marginal weather, for his last ride. They decide torque wrenches are a thing of the past, and QA inspections are a pain in the neck. They ignore the practice of emergency procedures, ending up one crew short. They treat lightly



crew-rest requirements when the tempo is high, or shut the bomb bay doors before ensuring all personnel are safely removed from the area.

"Needless," we say. Since we are creatures of habit why don't we spend more time reinforcing good habits? I'll bet you can think of valid reasons why your outfit doesn't. Why not take the time this week and jot them down and discuss them with someone who cares. See if there are valid



reasons for allowing the stage to be set for an imminent accident.

For want of a nail, the structure collapsed! For want of a program, a life was lost! Does the safety program in your work center, your office, and your squadron reinforce good practices, procedures, and habits? Does it remind the personnel of potential pitfalls? Does it review history? If not – why not? ▶

BOW DOWN



PREPARATIONS were made to return a P-3 to the line after completing maintenance of repacking the nose gear landing strut. As the towing crew began to move the aircraft, the nose gear strut collapsed and the nose fell until it came to rest on the tow bar, nosewheel, and landing gear door.

Investigation revealed:

- The job was begun by the day shift and passed to the night shift to complete.

- The day shift used a procedure unfamiliar to the night shift; namely, upon breaking the overcenter lock, the landing gear safety pin was reinserted to ensure that the nose landing gear strut remained forward of the center (locked) position. This procedure, while placing the nose landing gear strut at an angle to facilitate maintenance, also prevented the overcenter lock from engaging.

- The nose gear safety pin remained in place with the strut pinned forward of center until the mishap occurred. Upon completion of required maintenance the P-3 was lowered from the jack and the CDI inspected the work. His actions included a visual check to ensure the landing gear safety pin was in place.

- The position of the nose gear strut when pinned in this manner is only slightly forward of the normal locked position and is not readily discernable by visual inspection.

- Visual verification that the ground safety pin is in place is not an acceptable method for ensuring the overcenter lock is made. Inspection of the assembly after the mishap and prior to removal of the pin revealed that although improperly pinned, this situation is not easily recognized and will probably only be noted by an individual looking specifically for such an arrangement.

Jiggling the safety pin would reveal the abnormal condition, since the pressure exerted by the linkage resting above the pin will result in binding of the pin — rather than the normal condition of free movement.

Someone commented on how disturbing mishaps of this nature are. This particular incident was brought on by events which never should have occurred. However, it is felt that some positive results were associated with the incident. There were no injuries and damage was limited; but even more important, it served to dispel a complacent atmosphere within the squadron. The incident was a reminder that these things don't always happen to the other guy.


Within the squadron, steps were taken to prevent this from occurring again by:

- Emphasizing that the safety pin is not reinserted until the lock has been made (after breaking the overcenter lock on any gear).

- Ensuring that all divisions and branches review their turnover procedures between shifts for completeness.

- Giving additional instruction to the line crew, towing crews, and airframes personnel in the proper methods for checking landing gear safety pins to include a demonstration of actually jiggling the pin and ascertaining free pin movement.

- Ensuring that tow directors know that landing gear safety pins are properly inserted before towing operations begin.

This kind of mishap can occur in any squadron. Maintenance officers, why not review your towing procedures to ensure that a similar incident or ground accident is not in your future? 

WEAK BINDERS

There's a little ditty which everyone learned as a wee lad/lass which describes what a tough job it is to wash during a drought. With apologies to the author we've adapted that ditty to lead into an incident.

It ain't gonna stop, no brakes, no mo!

It ain't gonna stop, no mo!

So how in the heck

Can I save my neck?

When it ain't gonna stop. Oh no!

The pilot of a C-1 had a chance, just one, to prevent an incident before it happened. He should have been alerted to the possibility of braking problems when he noticed that more pressure than normal was required to actuate the right brake during taxi. However, the aircraft was fully controllable, so he continued to the warmup spot, checked the mags, and took off.

After a routine flight of a couple of hours the pilot reached his destination. It was an old Crosswind Airport. Now every COD pilot who has ever been to Crosswind Airport knows the wind has never been down the runway, not even once. The pilot that day was an "old head." He'd been in and out of old Crosswind so many times he thought it was his own. It was also his least favorite airport. The runway was short and narrow — maybe 50 feet wide and a tad under 4000 feet long.

The wind that day was 340 degrees at 15 knots with gusts to 20. The tower operator didn't give him his choice of Runways 8/26 but advised the duty was Runway 8. The pilot planted the C-1 right on the numbers, on speed. Halfway down the runway on rollout he began intermittent braking. The aircraft began drifting toward the right side of the runway. Then the pilot felt the short hairs on his neck begin to bristle and the pucker factor begin to rise.

He felt all was not right with the world and that maybe he wouldn't be able to stop on the runway. He increased the binder pressure, muttered an expletive, and hollered to no one in particular, "Hold on guys, it may get rough." He set the emergency brake, and the port tire blew. The aircraft finally stopped 5 feet short of the end of the runway. The 3M load (men, money, and material) he was

hauling was safe. The pilot shut down in place and had a tow tractor pull the aircraft clear of the runway.

The port tire was changed and the pilot eased out onto the taxiway for a careful taxi test. Both brakes were weak, but the right brake was the weaker. There wasn't any maintenance support at Crosswind, so the pilot elected to fly on back to Homeplate for further maintenance. The flight home was uneventful.

Maintenance personnel inspected the landing gear system, bled the brakes, but couldn't find any discrepancy. After a lengthy discussion between the pilot and airframes personnel, with nothing revealed, the QA folks discovered the brakes had not been bled in accordance with the MIMs. They were subsequently bled correctly but were found to be spongy, and the right brake was still considerably weaker. Further checking disclosed that the right brake was worn out. The right brake assembly was completely replaced and all tests were then satisfactory.

It came to light that on the previous flight the brakes had been gripped. The plane captain had reported the problem to maintenance control — that the right brake pucks were at minimums. *However, maintenance did nothing about it.* The aircraft was left UP due to the pending operational flight, which almost ended off the runway. The pilot who had the near-mishap was not advised, either by a remark on the yellow sheet or in person, that a problem existed.

The command pointed out that the chain of events which ended in the incident could have been prevented if any one of a *number* of personnel had followed correct procedures or carried out his responsibilities fully. ◀

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If you believe some medical reports, the most dangerous part of a car is the cigarette lighter.

Ace L.



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MAYDAY! MAYDAY! I'm going to ditch!

By Capt George R. Jackson, USAF

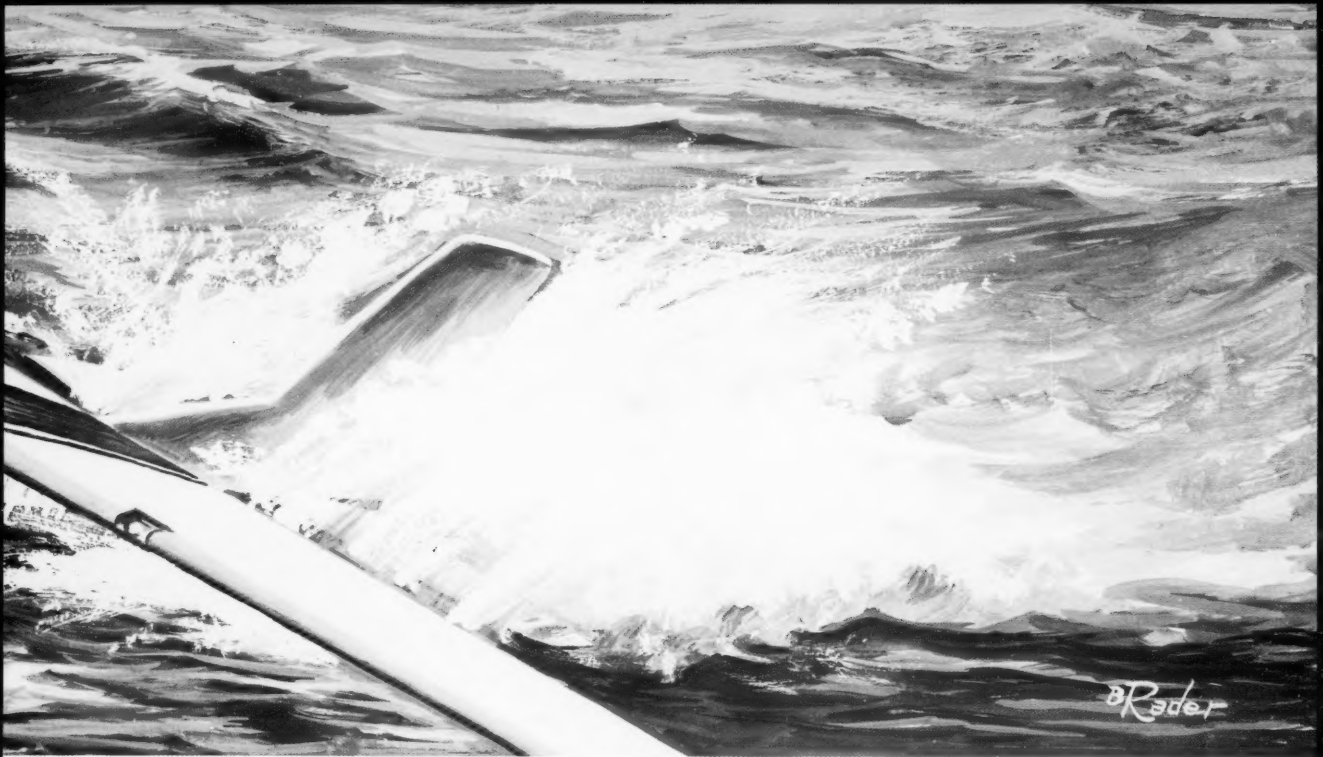
THE following is a true story of a ditching incident off the coast of Saipan as told by Ray Starling (Andersen Legal Officer) to George Jackson (Andersen Flying Safety Officer). The incident began at 0545, Saturday morning, 11 March 1978.

After completing normal morning activity, Capt Starling looked out on another beautiful morning on sunny Guam. A clear day with little wind, it was perfect for his first cross-country solo in the Aero Club Cessna 150. After breakfast, he was off to the Naval Air Station Aero Club to meet his instructor.

Everything was quite normal through preflight. All instruments looked good and all survival items were in place. At 0805 Capt Starling got clearance for takeoff. Minutes later he was level at 5500 over the water. There were very few clouds and visibility was unlimited; it just couldn't be better — or could it?

Halfway between Guam and Saipan, over open ocean, with no emergency fields nearby, the engine RPM suddenly decreased to idle. Capt Starling tried to adjust the throttle, but the RPM would not increase. Next, his emergency training took control. He performed the steps his instructor had taught him for just such an emergency. First, fly the airplane (sound familiar?). Next, trim and airspeed. (This is beginning to sound like a briefing from the Certified Flight Instructor Course.) With the airplane under control, Capt Starling made his Mayday transmission.

Guam Approach responded to the call. Approach monitored the aircraft position while Capt Starling continued his futile attempts to increase engine power.



After several runs through the checklist and a conversation with another Aero Club IP, Capt Starling told approach that he couldn't make Saipan. He was going to ditch.

When he realized he couldn't glide to a land base, he began to review ditching procedures. He checked his personal equipment and everything was in place. The lifevest was securely fastened and the raft was within arm's reach. Restraining devices were tight and Capt Starling was ready for the final phase.

He turned the aircraft into the wind and waited. Initial water impact was not severe. He had taken worse falls while water skiing. As the tail hit, the nose dove into the water at a 60-degree angle. The next sensation was water in the cockpit. He removed restraining devices and opened the aircraft door.

As he exited, he shoved the liferaft out the door. Once in the water, the waves pushed him against the airplane. This caused some problems. He was forced under the water as the wing came down near his head. Finally, he got clear of the airplane and found the liferaft, but another problem developed.

The sea anchor on the raft was entangled in the airplane. As the airplane sunk, so did the liferaft. Frantically, he pulled and gnawed at the ropes (sure could have used a knife about then). Finally, the ropes came loose and the raft was free. He crawled in the raft and waited for rescue.

At 0920 the rescue chopper arrived and out jumped a frogman with a knife in his teeth (you guys are here to

rescue me, aren't you?). Capt Starling told the frogman he could swim, and he wasn't hurt. Then came the shocker. The frogman punctured the lifevest and the raft. This action prevented either item from being sucked into the helicopter's rotor; however, the action didn't do a thing for Capt Starling's confidence. *(Puncturing the lifevest is not normal SAR procedure, so it's no wonder it surprised Capt Starling. — Ed.)* As he floundered in the water waiting for the chopper and its horse collar, Capt Starling drank a gallon or two of ocean. Finally, the collar was secured and Capt Starling was pulled to the safety of the helicopter.

The rest of the story is a happy ending. Wife, instructor, and FAA official were all relieved to see Capt Starling when he got back to the Naval Air Station, but the story isn't quite over. There are certainly some lessons to remember (none of them are new).

First, Capt Starling used all the flying ability he had to stop, think, and analyze the situation. Ditching a fixed-gear airplane is a no — good deal, but training and proficiency really paid off.

Second, don't assume the aircraft is useless when initial impact occurs. You have survival equipment, but you must know where it is and how to use it.

Finally, the rescue is not complete just because SAR arrives. All your land and sea survival training is worthless if you don't do your part to help the rescuers. ◀

Capt Starling is the Base Legal Officer at Andersen AFB. He had less than 100 flying hours at the time of the accident. Capt Jackson is the Andersen Flying Safety Officer and a B-52 Instructor Pilot with 2400 flying hours.

A spirit of can-do is an admirable trait in any pilot, when tempered with training, experience, and a thorough knowledge of NATOPS and pilot qualifications. However, can-do without thought, or with disdain for a given set of operational conditions, is foolhardy. This is the story of helicopter pilots who incorrectly computed the power available against the power required for a . . .

DEADLY EXTERNAL LIFT

SIX CH-53D helicopters were engaged in a realistic training exercise in rugged terrain. The exercise had been underway for several days. Troops and supplies had been flown in and out of rough country with regularity.

The crew of one helo was briefed early one morning, and two missions were assigned: take a passenger to one hilltop and return to base with retrograde; then backload troops from another hilltop and return to base.

A briefing was conducted and the pilots were seen computing data for the second part of the mission — the troop backload, which also included an external lift. At the last minute before departure, an additional passenger drop was added. It was a no-sweat assignment. It involved taking one extra passenger to a ship, a few miles offshore, before beginning the mission.

The HAC and copilot were both fully qualified in the helicopter. The crewmen were old heads in the bird, there were no downing gripes outstanding, weather was VMC, and everything seemed just right for another day of routine operations.

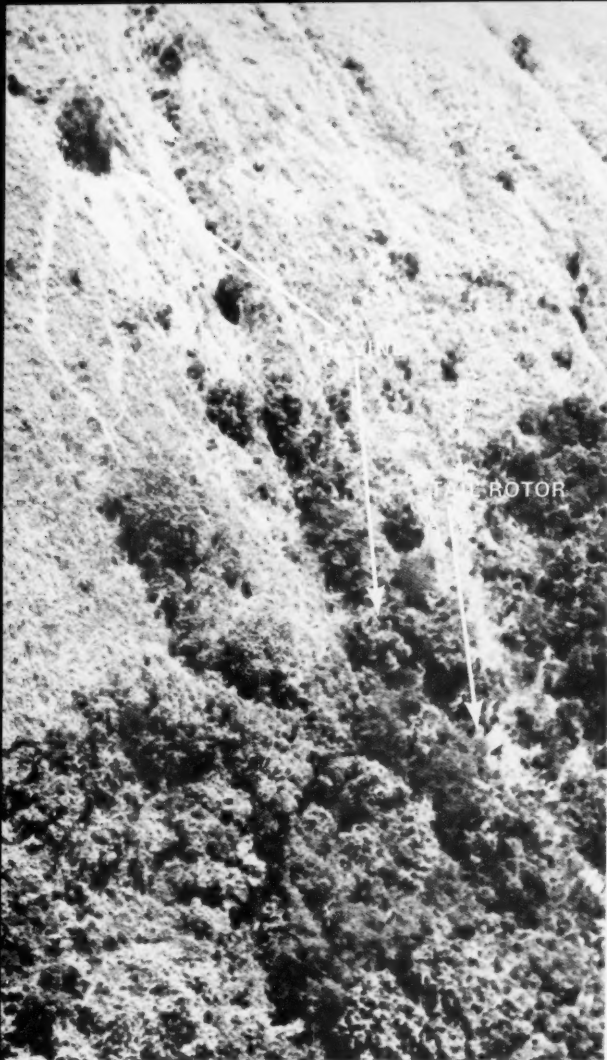
The first part of the flight went smoothly. The flight to the ship, the passenger drop on a hilltop, and pickup of retrograde were as advertised. Before departing on the second phase, the crew refueled the helo. Then they launched to complete the troop backload.

The flight from base to the hilltop took only 10-15 minutes. The hilltop was about 1500 MSL, but conditions that day made the density altitude almost 3600 feet. Winds were calm. The landing zone was oriented north-south and was 80 by 40 feet. The east and west sides had almost vertical drops of 300-500 feet.

The pilots were advised they would have to lift two loads of troops. The first load consisted of troops and cargo, all carried internally. They took the first load to base and returned for the second load.

The second load consisted of 33 troops, 20 cases of C-rations, and a water trailer. They loaded internally the troops and cargo at one position on the hilltop and air taxied into position over the water trailer. The water trailer





was positioned about 30 feet from the east edge of the landing zone. It was hooked up and lifted about 10 feet into the air.

The CH-53D began a level, right yaw as it drifted forward and to the right over the edge of the landing zone. One moment they were in ground effect, the next moment they were out. Witnesses recounted that as the yaw and drift began, the water trailer was released, but the helicopter continued in a slow, lazy turn for 270 degrees. Then the nose tucked down slightly and the helo continued in a series of rapidly increasing turns, while descending, until impact with the slope. The tail rotor clipped a tree, the tail rotor gear box departed the aircraft, and the CH-53D descended out of control and impacted the jungle 300 feet below the landing zone. Fire broke out in 3 or 4 minutes and the helicopter was completely destroyed. There were multiple fatalities.

It is apparent that the pilot failed to abort quickly enough to prevent loss of directional control. It is common knowledge within the helo community that a reduction in power may cause rotor RPM to increase when this situation is encountered. Also, a decrease in gross weight, after the water trailer was released, should have been adequate to alleviate the loss of directional control and permit recovery. However, in this accident, the release of the external load probably occurred at about the same time ground effect was lost.

Undoubtedly, the pilot was initially concerned with "holding what he had," because he was turning back into the hill. We can also second-guess that he permitted movement out over the edge to keep from striking his tail

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rotor on the rising terrain in the landing zone.

Originally, the aircraft had picked up the water trailer on a heading of 080. After 200 degrees of turn, the cockpit would have been facing the saddle in the landing zone. The DIR confirmed that No. 2 engine was at full power, and although the setting on No. 1 engine could not be confirmed, it's believed No. 1 engine was also at full power. If the pilot instinctively increased collective pitch to avoid the rising terrain, or to counteract settling out of ground effect, this would account for an increase in yaw, a nose tuck as the rotor RPM drooped, and an already critical situation becoming unrecoverable.

Originally, the pilots had computed the troop backload for 30 troops and a lighter weight water trailer. In fact, they boarded 33 troops and picked up a heavier external load. The aircraft actually was considerably heavier than computed. It was determined that the gross weight was 39,300 pounds. This would require 92 percent torque in ground effect and 100.5 percent torque over the edge. Max available torque under the conditions was 100.5 percent — no safety margin and no room for error.

Without a doubt, neither pilot realized the situation they were in before hoisting the water trailer. Were they complacent? It's possible. They had made similar pickups, in recent weeks, from the same landing zone. Then, too, they could have been led down the garden path by a design weakness. Their aircraft had insufficient tail rotor authority to provide antitorque for the engine power being produced. Many thought that the severity of the lack of tail rotor authority was not adequately emphasized in the NATOPS manual.

Under the circumstances, power available, as the pilot slid over the cliff edge out of ground effect, was insufficient for the power required. That's like the runway behind you on takeoff, or a flameout on final approach — *not quite enough!* ◀

Safety vs JAG Manual Investigations

SAFETY investigations culminating in a Mishap Report are meant to ascertain the causes of the incident/accident and examine the means to prevent a recurrence. Statements of witnesses are unsworn and the document is usually privileged. On the other hand, JAG Manual Investigations are designed to assign responsibility for an incident/accident and are legal documents releasable under the Freedom of Information Act. Consequently, the JAG Manual Investigator and the Safety Investigator cannot be the same person, nor should Forms 5102 be included in a JAG Manual Investigation. OPNAVINST 5102.1 refers.

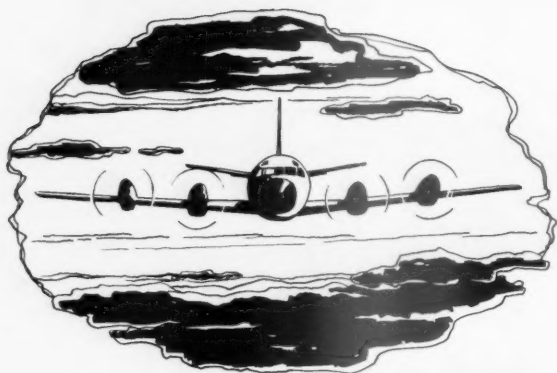
BRAVO ZULU

LT Ron Richardson

DURING TYT (type training) work-ups onboard the USS SARATOGA, LT Ron Richardson of ATKRON-105 was flying a night tanker mission in an A-7E. While rendezvousing on an F-4, he added power and felt three severe chugs from the engine. The *Phantom* crew informed him that he was leaving a large trail of sparks behind his aircraft. LT Richardson immediately reduced power and requested a ready deck as he began a descent back toward the ship. As he nursed the sick *Corsair* into the landing configuration, the LSO noticed at 1½ miles that the aircraft was still belching the long trail of sparks. The approach continued, and the sparking A-7 was arrested post-haste!

After arrestment, the engine continued to spark and was secured. Total time elapsed from the initial chugs and sparks to arrestment was 10 minutes! Inspection revealed a severely FODed engine. LT Richardson's cool, expeditious, and correct handling of this critical emergency situation, plus the rapid response of the ship's company in readying the deck for recovery, saved a valuable aircraft indeed. Well done to all in this coordinated team effort! ▶





Pussycat or Professional

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ONE of these days, through the concerted efforts of flight surgeons, psychologists, psychiatrists, human engineering experts, and scientists, a method may be developed to "look into the minds" of aviation candidates and pilots to determine their safety quotient. Whatever the method may be, it could be used to process applicants before flight training, and may even be used to terminate flight status of pilots already flying, if the tests prove an individual's safety quotient is less than satisfactory.

The tests undoubtedly will remove all inhibitions and reveal the real person. Responses, reactions, and replies of individuals will be measurable — possibly to the point of measuring their conscious and subconscious. A safety quotient readout would result, and those who equal or exceed the minimum standard will be the pilots of tomorrow.

What these yet-to-be-developed tests may weed out are those pussycats who flaunt rules and regulations, who can take or leave NATOPS, who don't recognize their own capabilities and limitations, who do not take advice of others, and who take unnecessary risks. Those who are left in a flight status will be the real tigers. These are the ones who take extra time to look critically at the maintenance history of a bird before signing the "A" sheet. They will be the thorough pilots who carefully preflight the bird, no matter what the conditions. They are the ones who will brief the flight and fly it as briefed. This group will encompass pilots who have enough self-discipline to resist

any urge to engage in unauthorized maneuvers. It will include the ones who always allow an extra margin for error.

Imagine Naval aviation being made up of 100 percent tigers! No more accidents due to flathatting, no more accidents due to fuel starvation, no more accidents on administrative flights into known icing conditions or thunderstorms, no more accidents due to "get-home-itis." Eureka, it's Utopia!

Enough dreaming, let's get back to the real world. We don't have magic formulae or safety quotient testing to expose the few who fly aircraft when they shouldn't. However, there are signs and idiosyncrasies which can be spotted to make one suspect.

We spot immediately the squadron loudmouth. (Most squadrons have one.) Then there's the squadron "showboat." (Seldom the same one as the loudmouth.) Keep your eyes peeled, too, for the lazy lunk — the one who can't be bothered with planning or preflights. The list of suspects might also include the clown. You know the kind; the one who is never serious about anything; the guy who gives voice to the philosophy that life's too short to worry.

Far-out tests, Utopia, braggarts, exhibitionists, lazy louts, and clowns — what in the world is the connection between them and this article? Here goes.

It seems that in the fraternity of Naval aviators there are a few misguided souls who make fun, poke ridicule at, and berate anyone who plays it cagey.

For example, consider a recent Anymouse. "I am an ex-rotorhead who became a stiff winger. A recent incident took place that really bugs me. Let me state first of all that I believe in rivalry between squadrons."

- After a conference at NAS, two aircraft departed for Hometown. Our sister squadron's aircraft was at 19,000 feet, and we were at 17,000 feet. The weather at Hometown was forecast to be at GCA minimums on arrival. We were given instructions to hold 25 miles short of Hometown because the weather was temporarily below GCA minimums. Upon entering holding, we could see a clear area 5 miles behind us and knew it was just a matter of time before Hometown became CAVU. Fuel was no problem; we had plenty, but we did have a decision to make. Should we continue to hold, or divert to our alternate which was CAVU and only 15 minutes away? We decided to divert, have some coffee, and wait for better weather at Hometown.

The sister squadron's plane commander, being the tiger he is, made another decision. He was cleared for a GCA to minimums, made an approach, but didn't spot the runway the first time. He waved off and, on the second attempt, saw the runway environment and made a successful



The other plane commander, who made a decision to shoot an approach, was perfectly at liberty to do so. However, after the first approach, when the pilot was unable to land, perhaps prudence would have dictated a divert instead of a second attempt. Anymouse does not mention whether Hometown's weather improved to minimums or better for the second approach. Even though the plane commander couldn't see the tower when he taxied by, Hometown could have been reporting legal minimums.

We would be remiss if we failed to comment about pilot capabilities and limitations. Just because a pilot possesses an instrument ticket doesn't mean he has the temperament, skill, or experience to shoot an approach to minimums under any conditions. (See "Judgment Failed," NOV '78 APPROACH.) There are some Naval aviators who complete an entire career without doing so. There are others who make such approaches frequently. Anyone who knows that a particular flight maneuver might overtax his capabilities is foolish to attempt the maneuver. Many pilots, by virtue of frequent and regular instrument flights, become highly proficient and confident, and think nothing of shooting an approach to minimums.

Good-natured bantering at the O-club is recognized and is as much a part of squadron rivalry as anything. It's healthy, when maintained within reasonable limits, and can bring out that extra effort to make one squadron the "E" winner and the others merely "also-rans." However, misplaced ridicule is absurd and should never arise. Those who use it are ridiculous. A very wise old philosopher once put it this way, "What I do speaks louder than what I say."

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landing. The pilot said later he couldn't see the tower as he taxied by, about 1000 feet away.

Meanwhile, back at the alternate, we had a nice hot cup of coffee, refueled, and departed for Hometown an hour after the other aircraft landed. We arrived in CAVU conditions and landed. The thing that bugs me is the razzing we took from the pilots in our sister squadron. We were called pussycats because we didn't shoot an approach when the weather was below minimums. If this is being a pussycat, then I "are" one — and glad of it!

Accepting at face value the weather conditions reported in the Anymouse, the two plane commanders were faced with a decision. The one who chose to divert was a *bona fide* tiger. He was allowing that extra margin for error. There was no operational necessity to attempt a landing at Hometown, below minimums existing. There was plenty of fuel onboard to reach his alternate, and knowing that the weather would improve within a short time, he used good common sense in diverting.



Everyone has heard a couple of old sayings such as "break a leg" and "here's mud in your eye." But who would believe on one short flight some variations of these sayings could happen to the pilots? Things such as . . .

Break an arm and Here's plastic in your eye



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AN S-3A launched on a night operational flight from a carrier. The pilot climbed to FL240 and was given vectors to on-station. While en route, the cabin pressure caution light illuminated and simultaneously the copilot's canopy departed, with associated explosive decompression.

The crew donned oxygen masks and the pilot nosed over to begin a descent. The pilot noted his copilot was injured and unable to assist. The pilot selected emergency IFF, deployed full speedbrakes, tuned in the ship's TACAN, secured air-conditioning/pressurization, and opened the aux vent.

The descent was maintained to 4000 feet and the aircraft was leveled off. The pilot tried to establish

communications with the carrier but was unsuccessful. Communications were severely degraded by noise. The pilot had no UHF but was able to utilize ICS via override. The TACCO finally established communications with an airborne E-2C and declared an emergency.

The pilot returned to the carrier and shot a lost-communications ACLS approach, but was waved off because of a fouled deck. He had positioned the S-3A on ACLS final at 2 miles and flashed the taxi light. The next approach was OK all the way and the pilot made a routine landing.

The entire copilot's canopy was broken away from the frame. Two areas about 5 inches long — one along the lower forward vertical edge and one along the lower aft vertical edge — showed straight line breaks. The remainder showed jagged edges at angles to the surface plane of the canopy. There were numerous broken interior plastic panels throughout the aircraft, plus the loss of the copilot's eyebrow panel and utility light. The upper ARS-2 antenna was damaged, the TACCO's canopy was gouged and scratched, and fiberglass insulation and debris were disbursed throughout the aircraft. Even the yaw vane on the copilot's ejection seat had deployed. A borescope inspection of the starboard engine revealed FOD beyond limits.

On a previous flight, the canopy had been struck by the inflight refueling basket. Inspection, however, had shown no damage. Since that incident, the aircraft had flown three flights without problems. A couple of days before the canopy departed in flight, it had been removed during maintenance, reinstalled, and the aircraft had flown almost 11 hours.

The copilot sustained a simple fracture of the left arm and facial lacerations. The pilot incurred mild corneal abrasion of the left eye.

There's no doubt this emergency was handled by a pro. We're proud to single out LCDR Richard J. Uhrig of VS-32 for an Attaboy. ◀

Take it around!

By LCDR E. R. Enterline
VP-8

*Lend me your ears, ye men of the sea
Whilst a tale of a pilot I tell.
For those who fly, though faultless we be
Our feathers will ruffle quite well.*

*The saga began on a clear day in May—
The eleventh, if my memory is right.
From Lajes they launched, not intending to stay,
Bermuda the end of their flight.*

*En route, so I'm told, this pilot would tell
Of the prowess and stature he'd known,
Of landings he'd made and greased-on so well,
Of the ice and the fog he'd flown.*

*So the stage was all set when Crew 9 arrived
With THE HULK behind the controls.
A break o'er the numbers, he thought as he dived
But the ceiling was low with no holes.*

*"I'll take a straight-in," he said to THE BEAST
As the checklist was through being read.
Coming down through the clouds, not caring the least
For the runway was sighted ahead.*

*The landing speed stated as One Thirty-Five.
But, alas! He was fast in the groove.
Past the lights and the numbers he continued to dive
And dismissed a waveoff as a bad move.*

*Far down the runway he finally touched down,
At a hundred and fifty knots, I've heard say.
The roar of reverse shuddered the town.
Hitting the brakes brought grief to his day.*

*The gulls in St. David's scattered from fright
As the blast from tires broke the calm.
Pieces of rubber quickly took flight,
While some people thought it was a bomb.*

*Inside the craft, this pilot of note
Surveyed the extent of his plight.
More wounded at heart than mere verse can quote,
He taxied to finish his flight.*

*The Skipper was there with a questioning grin
As he peered through the shreds at the rim.
When slowly THE HULK emerged from within,
His spirits appearing quite dim.*

*The moral, my friends, is clear as the day:
As you pilot your craft to the ground,
And the markers whiz by down the runway,
Think not of your pride, but "Take it Around."*





An aviator's guide to self-destruction

By LT Lawrence H. Frank, MSC, USN
Aeromedical Safety Operations
COMNAVAIRPAC, San Diego
and
CAPT Frank E. Dully, Jr., MC, USN
Force Medical Officer
COMNAVAIRPAC, San Diego

SELF-MEDICATION in aviation is a common and potentially deadly act. Most individuals have the mistaken belief that if a drug can be purchased over the counter it is safe. Nothing could be further from the truth. Over-the-counter drugs can be just as misused as any prescription or illicit drug.

OPNAVINST 3710.7J prohibits the use of over-the-counter drugs by flight personnel unless specifically approved by a flight surgeon, aviation medical examiner, or aviation medical officer. This regulation tells us two things: first, you need permission prior to taking any medication; second, you require a doctor trained in aviation medicine to give you that permission. Medical officers and private physicians not trained in aviation medicine are not cognizant of the dangerous consequences of using certain medications while flying.

Drugs have four effects. The first is the intended effect, such as the relief of a person's cold symptoms. Second, there are side effects. Side effects may be predictable or unpredictable. Often, however, the side effects are undesirable, such as drowsiness or increased blood pressure. The third effect is the idiosyncratic effect. That is, different people react to the same drug differently, or the same person reacts to the same drug differently on different occasions. Fourth is the synergistic effect. This is where two drugs interact with each other, resulting in a larger effect than the sum of their individual effects. In a synergistic reaction, one plus one may equal four, five, or ten.

When the effects of drugs are studied, they are typically examined under conditions of normal pressure or oxygenation (i.e., sea level). Precious little research has been conducted on the effects of drugs as a function of altitude. The exact effects an over-the-counter drug has on oxygen-carrying capacity, G tolerance, or susceptibility to spatial disorientation are virtually unknown. Consequently, the effects about to be described for some of the more common over-the-counter home remedies should be considered as best-case conditions. If anything, altitude will probably dramatically accentuate the drug effects.

Listed below are the potential effects of self-medicating with some common over-the-counter drugs that can be purchased at the home-remedy counter of any Navy Exchange or supermarket. For obvious reasons, the brand names of these home remedies are not given. To avoid confusion, the scientific names for the drugs contained in the home remedies are omitted.

Text continued on page 28.

ASPIRIN

- Affects regulation of body temperature by acting on hypothalamus.
- Greater heat loss due to an increased blood flow to the extremities and increased sweating.
- Affects the acid-base balance of the body, causing a variation of the rate and depth of respiration.
- Two aspirin will increase oxygen consumption and carbon dioxide production which contributes towards hypoxia and hyperventilation.
- With excessive dosages, nausea, ringing in the ears, deafness, diarrhea, and hallucinations can occur.
- Has a corrosive action on the stomach. Two aspirin on an empty stomach can irritate the lining enough to draw a teaspoon of blood. Corrosive action also promotes gastrointestinal problems.
- Reduces clotting ability of the blood. A recent study demonstrated that patients taking aspirin prior to arterial bypass surgery had postoperative blood losses almost three times greater than those patients who had not taken aspirin before surgery. This indicates that if you are injured and have been taking aspirin, you will have a higher than normal blood loss. This could mean the difference between life and death in a survival situation.

NASAL DECONGESTANTS

- Prolonged increases in blood pressure and pulse; insomnia; fatigue; headache; dizziness; incoordination; confusion; drowsiness; amnesia; possible depression; dry mouth; loss of accommodation (the eye's ability to focus); rapid heart rate; double vision (diplopia); euphoria; lassitude; tremors; nausea and vomiting; diarrhea; and gastrointestinal effects.

SLEEPING PILLS

- Depress the central nervous system and automatic nervous system.
- Reduce alertness.
- Predispose aviator to heat stroke (i.e., greenhouse effect).

THROAT LOZENGES

- Damage blood cells.
- Potential kidney and liver damage when toxic.
- Damage skin mucous membranes due to presence of alcohol.

- Local allergic reactions are not uncommon, causing rapid swelling of mouth, throat, and respiratory tract, thereby cutting off the air supply.
- Damage nerve cells if excessive amounts are absorbed.

COUGH DROPS

- Depression of the central nervous system with high dosages.
- Reduce reaction time with high dosages.
- High probability of overdosing. To suppress the cough reflex, the drug acts on the cough center of the brain. But, to suppress the cough, you usually require a dosage three to four times higher than that recommended for adults.

PETROLEUM JELLY

- Becomes crusty when exposed to 100 percent oxygen. If it is used to moisten dry-scaling areas of the mouth or nose, and then exposed to 100 percent oxygen, the petroleum-based product will become the texture of sandpaper. This can lead to severe nosebleeds and bleeding lips in flight.

CAFFEINE

- Wakefulness; tremors; gastric hyperacidity and indigestion; cardiac arrhythmias; increased heart rate; promotes body dehydration through increased urine output; headache; dizziness; and nausea.

NICOTINE

- Increases blood pressure.
- Constricts small blood vessels.
- Increases the need for oxygen 10 to 15 percent.
- Can increase reaction time to twice the normal time by paralyzing nerve cells.

ALCOHOL

- Reduces G tolerance.
- Predisposes to hypoglycemia (low blood sugar).
- Affects the inner ear and predisposes to spatial disorientation. This effect can last up to 48 hours.
- Depresses the central nervous system.
- Dulls critical judgment.
- Releases inhibitions.
- Decreases intellectual function.
- Decreases skilled responses.
- Decreases motor control.
- Decreases sensory perception.

Did the preceding information surprise or maybe scare you? Good! These are not the only possible effects. All drugs have the potential of yielding an allergic reaction. The trouble is, you do not know if you are allergic to a drug until you try it. A drug which may not cause an allergic reaction on the ground may interact with 100 percent oxygen or altitude and initiate an allergic reaction in the air.

Another hidden danger of self-medication is the cumulative effect of taking the same drug over a sustained period. A lot of drugs, especially those found in nasal decongestants, remain in the body for long periods of time. In fact, your body has not yet cleared away all the drug from the last administration when you take the next. Consequently, the base level of the drug in your body increases with each administration. In this manner, it is relatively easy to build up high levels of a drug in your body without intending to do so. Suffice it to say that this type of scenario has occurred in the past, leading to a fatal crash.

One further point. Do not forget about the synergistic effect. Think of the possible outcome of innocently consuming half a carafe of wine with a late evening meal,

getting up the next morning for an early brief and taking a nasal decongestant to relieve a stuffy nose, drinking two or three cups of coffee (caffeine), and smoking a couple of cigarettes (nicotine) prior to takeoff. Done it before? Sure you have. But, for some people, the last time they did was the last time they did anything.

Naval Safety Center statistics show that about 2.3 percent of the major aircraft accidents during the last 5 years had self-medication (including alcohol) listed as a contributory variable. This may seem like a small percentage (and in all likelihood is only a portion of the actual incidence), but even one needless death is too many. If you fly while self-medicating, it may not get you today, tomorrow, or next month, but it will eventually get you.

If you read the labels on over-the-counter drugs, you will find two common warnings:

- Do not drive or operate machinery while taking this medication.
- Not for frequent or prolonged use.

Perhaps a third warning should be added:

- Aviators beware: Self-medication is hazardous to your health!



The Great Roller Bearing Mystery

By LT R. D. Berger
VF-171



*Here is a story, strange but true,
Of FOD, our constant foe.
We found some small steel bearings,
From whence we did not know.*

*We'd find them in the hangar,
And we'd find them on the line.
We'd find another when we thought
That things were going fine.*

*We looked at all the tow bars
For the bearings that we feared.
Although nothing was amiss,
Those bearings still appeared.*

*We checked out all our trailers,
And we doublechecked each cart.
We looked at everything with wheels,
Then went back to the start.*

*And while a plane was being towed,
Some sharp eyes looked around.
They saw a tow bar bearing
As it fell out on the ground.*

*Now our bearing problem's solved,
And so we end our tale.
ADI LISH was on the ball,
And saw that bearing fail.*

OLD RELIABLE

LET me tell you how Old Reliable almost let us down. It began about lunchtime. I was trying to hustle the Ops officer into a handball game when he asked if I'd take the bird out for a few turns around the flagpole. The request was one I could not turn down. After all, the way he phrased the request didn't give me any indication that a negative response was desired or expected. So, I told the Ops officer I'd be delighted to fly and we'd postpone the handball game a day or two.

There were to be only three of us aboard — my copilot, also a TPC and a real good gent; the flight engineer, who had over 2000 hours in model; and myself. We were going to fly a 2-hour local flight and didn't plan to leave the field area. We were going to shoot touch-and-go landings, GCAs, TACAN and VOR approaches, and practice simulated emergencies.

We briefed everything we were going to do, and conducted a thorough preflight. After takeoff the flight engineer went aft to check the engines and wings. He quickly reappeared and reported we had a sizeable hydraulic leak streaming off the starboard wing behind the No. 3 engine.

We discussed the leak, decided to secure the No. 3 engine, and I directed that the checklist be executed. While my copilot and flight engineer were going through the various steps, I picked up the mike, declared an emergency, and told the tower we were downwind and requesting a full stop. Clearance to land followed immediately. However, as events unfolded, it was not going to be simply a matter of turning final and landing. We were going to have to work for this one.

When throttles were retarded to reduce airspeed and the gear handle put down, the main landing gear would not indicate down and locked. The gear indicator showed unsafe, and warning lights illuminated. It was definitely not

time to continue in a normal manner. Power was added, the tower was advised of the development, and we swung around for another pass. The flight engineer slipped back into the crew compartment and refilled the hydraulic system. The gear were dropped and the flight engineer confirmed that they were down by peeping through the drift sight. We made a low pass for a visual check by the tower, and the controller said, "Your gear appear to be down and locked." We turned final once more and, with all the gages normal, made an uneventful landing. I let the *Skymaster* roll to the end of the runway, used very little braking, had the gear pins inserted, and taxied back to our line.

Later, we found out the causes of our problems. The hydraulic leak occurred because of a failure in the high pressure hydraulic line between the engine-driven pump and the firewall. We had eliminated this by securing the pump when shutting down the No. 3 engine and using the No. 2 engine hydraulic pump to lower the gear. After servicing the hydraulic system in flight, the landing gear pressure read a normal 3000 pounds. The hydraulic bypass valve had been pulled after No. 3 was secured, and the hydraulic system to the gear and flaps was unaffected by the failure of the hydraulic line. The landing gear problem was an electrical one. A bolt inside the micro-warning switch had been inserted too far and the switch was out of adjustment.

The reason for telling you about this incident is to reiterate that you can't beat NATOPS. We were in a position where there was plenty of time to cover each emergency as it arose. We followed the appropriate checklists and ended up with an odor something like *Chanel No. 5*. Old Reliable didn't let us down, but she did shake the cage a "skosh." Who knows, since she has over 30,000 hours, she just may be good for another 30 thou! ◀

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Letters

Up or Down?

Offutt AFB - (Re: Anymouse - "Up and Down," (APPROACH, JAN '79.) Realizing that Anymouse forms may be authored by anyone regardless of their level of knowledge or experience, and are generally a valuable and beneficial safety tool, I think this particular report was such that it should have received an editorial comment. This article depicts the situation that "we [maintenance] downed the aircraft, but the pilot decided to put it back in commission and took off..."; "...so he [pilot] put it in an up status and went flying"; and "...some pilot is going to up a downed bird..."; "Then it will fall back on maintenance..."

I do not know the type of squadron, aircraft, or other particulars of these compass problems, but unless OPNAVINST 4790 has changed since I was an A-7 squadron maintenance officer, the squadron in comment has a serious who's-in-charge problem or the Iratemouse has a gross misunderstanding of the established procedures of who "ups" an aircraft. It would seem that a brief editorial synopsis, of the applicable section of OPNAVINST 4790, describing those few persons with such authority, would have helped Iratemouse and others understand the correct procedures. Otherwise, one finishes reading the article with the distinct taste that pilots try to rip off maintenance; lack of editorial comment tends not to refute this position which I personally doubt exists as stated.

Though there are occasionally disagreements, maintenance personnel and pilots are all on the same team with a common goal,

"max sorties off the bow and a safe return." All that aside, maintenance still holds the hammer.

CDR George W. Lundy, USN

● Your point is well taken. I sincerely hope that Iratemouse was slightly misinformed, although it does sound as if his maintenance department has some serious problems. Part of the confusion may have been due to Iratemouse's misunderstanding of a "down" system versus a "down" aircraft.

Inform Your Squadron

USS NEW ORLEANS - In the FEB '79 issue of APPROACH, AMH1 Blair's letter to the editor on safety attitudes and Shorttimemouse's contribution, "Do As I Say," (ANYMOUSE) present quite a contrast. It has been my impression over the years of command that letters and/or suggestions that convey the tone of Shorttimemouse, i.e., "My decision to go or stay gets easier to decide with this going on. Only 65 more days to go!" usually are written by disgruntled, immature individuals who don't even bother to inform their LPO, DO, or department head of the problem. If so, I hope that the 20,000 accident-free-hours squadron that is referred to can identify itself from the "Do As I Say" article so they can pick up on AMH1 Blair's letter. Shorttimemouse has probably not bothered to inform anyone in the squadron of the problem. Maybe APPROACH knows the command and can do this service.

CAPT E. O. Buchanan, USN
Commanding Officer

● Unfortunately, "Shorttimemouse" did not sign his ANYMOUSE, and we could not identify the command. It is sad, but it has been found that some individuals submit an ANYMOUSE before even attempting to report a problem within their command.

Ejection Seat Safety

NAS Norfolk - Between 1970 and 1978, there have been seven inadvertent firings of ejection seats by ground personnel, resulting in two fatalities. How can this negative impact on safety be improved? There are three areas that can easily be checked by safety officers, maintenance officers, and shop supervisors:

- Are all seat shop personnel properly trained, ordnance certified, and supervised?
- Are an adequate number of personnel and rates available for the quantity of work, and the proper number of personnel assigned to each task?

- Are maintenance requirement checklists meticulously used every time?

Associated with this problem is the handling of explosive devices which have been involved in an aircraft mishap. During an investigation, the board must closely control access to explosive devices. Once the investigation is complete, all material should be inspected, removed, and disposed of by qualified EOD personnel only. Remember, this material has most probably been exposed to heat and shock, and should be considered extremely hazardous. Expended ordnance always contains traces of unburned propellant. Never assume that any explosive device is safe, and under no

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circumstances should ejection system devices (expended or live) be used as training devices. There are training devices designed explicitly for that purpose.

Air station safety officers: Does your station's salvage yard have any dangerous materials waiting for some curious person?

CNAL ASO

Safety Management

NAS Norfolk — Any mishap should be viewed as an error of management. Certain circumstances can be predicted to have an unusually high mishap potential, and procedures should be established to control this potential before the fact. Safety should be managed in the same way as any other unit function. Realistic goals should be established through management direction, then planned, organized, and controlled through task completion.

In the final analysis, any supervisor will achieve maximum results in those areas in which the command measures him. Although the concept of responsibility is universal, the concept of accountability is equally important. When an individual is held accountable, he will accept responsibility. If he is not held accountable, he will merely work in those areas where management applies temporary pressure.

COMNAVAIRLANT

Re: "Cargo Load Shift"

NAF Sigonella — It is unfortunate that the crew of a recently arrived C-2 didn't get to read the article in the MAR '79 edition of *APPROACH* entitled "Cargo Load Shift." Had they, they might not have had a near-mishap. Fortunately, for this crew, they came away unscratched.

When the cargo aboard this C-2 was being readied for unloading, it was discovered that four cruise boxes had shifted nearly 2 feet aft in the cargo cage. This unscheduled movement compressed the top two-thirds of the box that buttressed the cruise boxes. Once the cargo was unloaded, it was determined that the contents of the 600-pound shipment were concentrated in the center of the box and consequently no adverse flight characteristics were encountered during the flight from ship to shore. We confronted the crew of the COD as to what could cause such a shift, and the reply was that it must have been the cat shot, as the flight was very smooth and without incident. They further



stated that the load was checked and rechecked prior to launch. But it shifted anyway! We wondered if they were "new guys" on the block, but it turned out that all were seasoned and experienced on COD cargo ops.

Even after all that explanation, it left us with the thought that undue potential for mishap is omnipresent, and that special restrictions/instructions for COD aircraft should be developed to alleviate future occurrences of this nature. And above all, mishaps like the fatal one in the March issue should be prevented at all costs!

Anonymous Cargo Handlers

- There are fairly explicit instructions already in existence. Unfortunately, they are often ignored.

NATOPS Changes

FPO, San Francisco — I believe your response to a letter to the editor (Re: "Judgment Failed") in the FEB '79 edition is misleading. The letter discusses a recent accident and concludes by suggesting a NATOPS change. The editor's response was, "If your command feels a NATOPS change is in order then you should submit a routine change for the next conference." This statement implies that a command should screen all change recommendations before an individual can submit it. There currently does not exist any requirement for individuals to get agreement from their command. OPNAVINST 3510.9F, CH-5, clearly states "NATOPS publications must have inputs from many sources in order to maintain the effectiveness of the program. To accomplish this, anyone in the Naval Establishment who notes a deficiency or an

error is obliged to submit a change recommendation. The participation of the individual in this program of continual manual improvement is imperative."

LT J. J. Miller, USN
VP-40 NATOPS Officer

- Our statement was not meant to imply that individual recommendations are not possible. Most commands do screen and endorse the NATOPS change recommendations coming out of their unit to ensure accuracy. However, lack of positive command endorsement does not preclude the change recommendation being submitted.

Practice Makes Perfect?

NAS Jax — The article in the DEC '78 issue, "Fatigue," proves a point that should be well taken by all members of the aircrew, air control, crash crew, and ground crew team alike. Fatigue takes its toll amongst us all. The following thoughts are submitted as an adjunct to the author's thoughts on the subject.

In the military, experience is considered an invaluable asset. In almost every endeavor, we can improve our proficiency by training; in other words, "practice makes perfect." Unfortunately, this old adage does not hold true in one important area — fatigue. We cannot safely fly, drive, or perform any other potentially hazardous task while fatigued. If we are lucky enough to avoid an accident the first time, our accident risk is not decreased if we try again. Fatigue always degrades performance; we lose our normal reserve of energy.

As the tempo of operations increases in a command, it is the responsibility of every squadron member to ensure that he or she uses their "free time" wisely. More than enough time is generally allowed for adequate rest and sleep, but this time is often abused by engaging in other pursuits. Conversely, those in positions of authority should constantly realize that any tempo of operations should always allow for adequate rest. When lives are at stake, exceptions must, at times, be made; however, fatigue should never be a planned factor in establishing a "training" environment. One doesn't perform any better, or learn anything, if he or she is forced to work while fatigued. In such a situation, we are only doubling the risk of an accident. Remember, you cannot "practice for fatigue."

LCDR R. L. Elzy, MSC
Aeromedical Safety Officer
NAS Jax



Too low over the H₂O

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THE HAC and crew of an SH-2 were returning to Homeplate after a night ASW mission. They had been airborne a little over 2 hours and were expecting a routine approach and landing.

They entered the pattern at 400 feet, 70 knots, and the gear were down. The pilots had completed the checklist and the radar altimeter was on. The HAC maneuvered to acquire the glide slope at 2½ miles from the ship, and was cleared for a starboard to port approach.

The copilot was looking outside the cockpit calling the aircraft turns to final lineup. The pilot stayed on the gages but overshot the final approach heading. While the copilot directed turns to the glide slope, the pilot stopped his instrument scan and began looking outside the cockpit. He tried to visually acquire the glide slope.

At this point there was a classic breakdown in cockpit coordination. The copilot had some smarts, however, and got on the gages momentarily, not knowing whether the pilot was disoriented or not. The copilot glanced at the attitude indicator and was satisfied they were wings level but *didn't notice the altimeter or airspeed*. He then looked outside again. The pilot by this time had closed to within 1½ miles of the ship. While maneuvering to final approach heading, the pilot saw the radar altimeter dropping below 20 feet. He immediately went to full power and began a climb — throttles to the firewall, collective to the armpit, and cyclic to the belly!

The pilot's heart slowly returned to its normal position during the waveoff. The second pass was routine and the pilot made an uneventful landing.

How it was possible that two qualified pilots, fully current, engaging in frequent flights, under all sorts of day/night conditions, could permit this to happen defies explanation. Let's take a look at some of the conditions, omissions, and actions that resulted in this near-gotcha, and see if some explanation can be made.

- Was there a cockpit briefing between the pilots? The odds are 5 to 1 the cockpit briefing was omitted.

- The weather wasn't too bad. We're not saying that a no-horizon night with low clouds and reduced visibility is a piece of cake, but compared to many approaches in far worse conditions, it wasn't a "butt buster."

- Communications between the pilots broke down. How can two guys sit side by side and not talk to each other when it's very important that each one knows what the other is doing?

- The HAC's decision to leave the gages before the copilot called "on the glide slope" or "deck in sight" was a real no-no. It was further compounded when the HAC did not tell the copilot he was going visual.

- Downward pressure on the collective, even though inadvertent, caused the helicopter to almost fly into the water. Why weren't both pilots altitude conscious? They should have checked their altitude long before they did.

- Both pilots ignored or didn't see the flashing red low-altitude warning light, which was set for 200 feet. Maybe they both put too much reliance on the baro altimeter. Anyway, they flew right through the 200-foot setting.

- There was some distraction in that their UHF channel was full of garbage. They didn't have the benefit of a discrete channel.

There's a message for all pilots in this incident. When you're in control, shooting an instrument approach, you scan *all* those gages, you scan continuously, and then scan some more. If you have the luxury of a copilot, you talk to each other, you exchange information, you leave nothing to chance. The copilot keeps a lookout outside for visual cues and he keeps one eye on the gages. The pilot in control should be giving total concentration to his control of the aircraft. He should not be satisfied with anything less than being on heading, on altitude, on speed. He should be alert for a waveoff at minimums if the landing area is not in sight, and know exactly what he's going to do if a go-around is necessary.

The crew in this incident was afforded the luxury of a second chance, and gave all pilots a perfect example of what can happen when cockpit communication and coordination fly out the window. ◀

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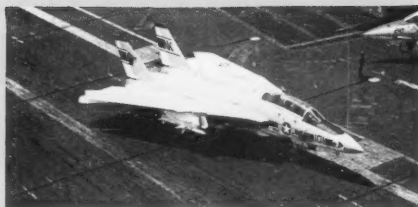
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MILLION,
SEVEN
HUNDRED
EIGHTY
THOUSAND
DOLLARS

EQUALS

total cost of FOD for 1978.

**WHAT
HAVE YOU PICKED UP
TODAY?**

